

REMARKS

In the Office action, claims 13-17 and 47-56 are withdrawn.

Claims 1, 2, 11, 12, 18-35, 40, 45 and 46 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1, 2, 18-35, 40, 45 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dong *et al.* (U.S. Patent Application Publication No. 2004/0009527; hereafter "*Dong*").

Claims 1, 18, 20, 21, 29-35 and 46 are herein amended and non-elected claims 13-17 and 47-56 are herein cancelled. New claims 57 and 58 are herein added. No new matter has been introduced by the amendment.

Claims 1, 2, 11, 12, 18-35, 40, 45, 46, 57 and 58 are currently pending in the case.

Reconsideration of the present application in view of the foregoing amendment and the remarks below is respectfully requested.

Claim Rejections under 35 U.S.C. § 112

Claims 1, 2, 11, 12, 18-35, 40, 45 and 46 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Among the claims rejected, the Examiner did not specify a specific error in claim 2 and Applicants do not believe claim 2 as is contains any error. Accordingly, Applicants believe the rejection of claim 2 under 35 U.S.C. § 112, second paragraph, is in error.

Furthermore, although the Examiner refers to "R³" and "R⁴" in "claim 18", there is no reference to either of the substituents in claim 18. Accordingly, Applicants believe these portions of the rejection are also in error.

Claims 1, 18, 29, 30, 32 and 33 are herein amended to incorporate the Examiner's suggestions. With regard to claims 20, 21 and 31, amendments to the options for R¹⁴ (see below) have made these portions of the rejection moot.

Accordingly, Applicants believe the rejection of the claims under 35 U.S.C. § 112, second paragraph, as being indefinite, should be withdrawn.

Claim Rejection under 35 U.S.C. § 103

Claims 1, 2, 18-35, 40, 45 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Dong*.

The Office Action states that *Dong* teaches thiazolidin-4-one compounds that are structurally similar to the instant claimed compounds.

Applicants respectfully traverse the rejection.

In general, based on the very broad generic teaching of *Dong*, one skilled in the art would have legitimate reasons to doubt that the myriads of potential compounds embraced by the generic teaching of *Dong* indeed all possess activity as common ligand mimics for nicotinamide adenine dinucleotide (NAD). This is especially true as only very few specific examples of common ligand mimics (*i.e.*, a total of only 14 compounds; *see*, for example, Figs. 8a-8c) for NAD are provided in *Dong* and biological data are provided for only three of the 14 compounds (*see*, for example, Fig. 5). In other words, *Dong* does not provide any guidance to one skilled in the art how to select the specific variables out of its broad generic teaching. This is also true for the next to the last generic structure disclosed in col. 1 on page 32 of *Dong*. In addition, *Dong* does not teach anything about how its generically disclosed compounds can be modified by, *e.g.*, substituting with specific substituents at specific positions in order to end up with the compounds of the present invention which are highly potent in reducing the number of circulating lymphocytes.

Thus, Applicants believe the present invention is not obvious at all over *Dong*. Nevertheless, independent claims 1 and 18 are herein amended to limit R^1 and R^{14} , respectively, to "a phenyl group independently mono-, di- or trisubstituted with lower alkyl, halogen, lower alkoxy, or $-CF_3$ " and dependent claims 20, 21 and 29–33 are herein amended to limit R^{14} to "a mono- or disubstituted phenyl group". Claims 34 and 35, both of which are dependent from claim 18, are also amended in accordance with the amendment to claim 18.

The amendment is solely to accelerate the prosecution of the case and Applicants expressly reserve a right to pursue the currently cancelled options for " R^1 " and " R^{14} " in a continuation application(s).

Thus, the present claims, as amended, all possess a phenyl ring at the position 3 of the thiazolidine ring, wherein said phenyl ring is substituted with 1 to 3 substituents independently selected from lower alkyl, halogen, lower alkoxy, and $-CF_3$, whereas all of the 14 specific examples of *Dong* are non-substituted at the position 3 of the thiazolidine ring. Again, *Dong* does not teach how to modify such compounds by specifically substituting the phenyl ring at the position 3 of the thiazolidine ring, in order to come up with the compounds of the present invention which are highly potent in reducing the number of circulating lymphocytes. On the contrary, based on the teaching of *Dong*, the skilled person would, if at all, rather assume that substituting aryl at the position 3 of the thiazolidine ring is undesirable to obtain further common ligand mimics for NAD, since aryl, compared to other substituents, like for example alkyl or a heterocycle, is excluded from being optionally substituted. However, assuming *arguendo* that the skilled person would, despite the absence of any obvious motivation, consider to substitute, for example, the phenyl ring at the position 3 of the thiazolidine ring, he would find no guidance in *Dong* about the nature of such substitution in order to come up with compounds that possess activity as common ligand mimics for NAD.

Furthermore, with regard to claims 1 and 2, these claims are directed to a pharmaceutical composition comprising as drugs thiazolidine derivatives according to the present invention. The common ligand mimics for NAD as disclosed in *Dong*, on the other hand, are not suitable as drugs as such because they lack specificity and might, therefore, if at all, be used as drugs only if coupled to ligands having a high specificity (*i.e.*, specificity ligands) for the receptor to form bi-ligands. However, *Dong* does not even disclose any bi-ligand having a distinct pharmaceutical applicability at all. Thus, present claims 1 and 2, as amended, are non-obvious over *Dong*, not only on the basis of the above-presented argument, but also on the basis of the fact that they are directed to a pharmaceutical composition.

Accordingly, Applicants believe claims 1, 2, 18-35, 40, 45 and 46 as amended, are not obvious over *Dong* and, therefore, respectfully request that the rejection of the claims under 35 U.S.C. § 103(a) as being unpatentable over *Dong* be withdrawn.

Additional Amendments

Claims 34 and 35 are further amended to delete the indication of "rac-" from some of the compounds so as to encompass both R- and S-enantiomers of such compounds, as well as mixtures thereof. Support for the amendment can be found, for example, in original claims 1 and 18, which explicitly claim as such, and at page 5, lines 11-15. Furthermore, optically pure enantiomers can be prepared in a manner well known in the art; for example, by using optically pure starting materials or by separating mixtures of enantiomers by, for example, column chromatography, high pressure liquid chromatography, crystallization, and the like.

No new matter has been introduced by the amendment.

New Claims


New claim 57 directed to the compound, (R)- 5-[3-chloro-4-(2,3-dihydroxy-propoxy)-benz[Z]ylidene]-2-([Z]-propylimino)-3-o-tolyl-thiazolidin-4-one, is herein added.

This compound is recited in claims 34 and 35. Further, new claim 58 directed to a pharmaceutical composition containing the compound of claim 57 is also added. No new matter has been introduced by the new claims.

In view of the above amendment and arguments, applicants believe all the pending claims are now in condition for allowance, an early notification of which is earnestly requested.

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Respectfully submitted,

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